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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,609	09/20/2005	Tomoko Akai	12480-000144/US	8155

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EXAMINER	
BRODIE, MARGARET	

ART UNIT	PAPER NUMBER
4122	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,609	AKAI ET AL.	
	Examiner	Art Unit	
	MARGARET BRODIE	4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/26/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/20/05, 3/28/06, 6/26/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the borosilicate glass is subjected repeatedly to heat treatment and acid treatment between the acid treatment step and sintering step and is then subjected to further acid treatment..." It is unclear to the examiner if "then" refers to after the sintering step, or after the repeated acid treatment and before the sintering. It is also unclear to the examiner the distinction between the heat and acid treatment steps of instant claim 1 and the claimed heat and acid treatment steps in between the acid-treatment and sintering steps as recited in instant claim 5.

The term "repeatedly" in claim 5 is a relative term which renders the claim indefinite. The term "repeatedly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, and 6, are rejected under 35 U.S.C. 102(b) as being unpatentable by Seiko et al. (JP 2003-313050).

The examiner received an oral translation of the above document and has requested a translated hard copy.

Toshihiko et al. discloses a method of making high silicate glass. In the method borosilicate glass comprising copper and a phase containing SiO2 phase is separated via heat treatment and brought into contact with an acid solution then subjected to another heat treatment, thus satisfying the limitations of instant claims 1 and 6. Regarding instant claim 2, the borosilicate glass may contain 0.1-5.0 weight percent oxides such as Iron and Chromium. (Detailed Description).

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6, 7, 9 and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Nakagawa et al. (JP 57-205337).

Nakagawa et al. teaches methods of making high silicate glass (Abstract). If there is any difference between the product of Nakagawa et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 6, 7, 9 and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

5. Claims 6, 7, and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Brown (2002/018942 A1).

Brown et al. discloses high silicate glass (Figure 15). If there is any difference between the product of Brown et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 6, 7, 9 and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

6. Claims 6, 7, and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Treuhand et al. (EP 0601391A).

Treuhand et al. teaches methods of making high silicate glass (Abstract). If there is any difference between the product of Treuhand et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 6, 7, 9 and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

7. Claims 6, 7, 9 and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Nakagawa et al. (JP 57-188432).

Nakagawa et al. teaches methods of making high silicate glass (Abstract). If there is any difference between the product of Nakagawa et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 6, 7, 9 and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

8. Claims 3, 4,6, 7, 9 and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Hood et al. (US 2106744 A).

Hood et al. teaches methods of making high silicate glass (Abstract). If there is any difference between the product of Hood et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 3, 4, 6, 7, 9 and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself.

The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

9. Claims 3, 4, 6, 7 and 9 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Seikosha et al (JP 59-102832A).

A translated copy of the above document (JP 59-102832 A) was used and has been submitted with this Office Action.

Seikosha et al. teaches a method of making borosilicate glass. If there is any difference between the product of Seikosha et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 3, 4, 6, 7, and 9 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in

the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

10. Claims 6, 7, and 13-16 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over The Handbook of Glass Manufacture (XP-002474811).

The Handbook of Glass Manufacture teaches the manufacturing of borosilicate and high silicate glass (Pages 746-747). If there is any difference between the product in The Handbook of Glass Manufacture and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 6, 7, and 13-16 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

11. Claims 3, 4, 6, 7, and 9 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Werner et al (JP 06-1999538A).

Werner et al. teaches a method of making high silicate glass. If there is any difference between the product of Werner et al. and the product of the instant claim(s) the difference would have been minor and obvious.

Claims 3, 4, 6, 7, and 9 are viewed as product-by-process claims and hence the methods they are created by are not pertinent, unless applicant can show a different product is produced. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113.

"There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 1, 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable by Nakagawa et al. (JP 57-188432).**

A translated copy of the above document was used and has been submitted with this Office Action.

Nakagawa '432. discloses a method of manufacturing High silicate glass. A borate glass composed mainly of SiO2, B2O3 and Na2O is phase separated into a phase abundant in B2O3 and Na2O (acid-soluble phase) and a phase abundant in SiO2 (acid-insoluble phase) generally by a heat treatment. It is well known that when glass phase separated in this way is treated with a mineral acid, such as sulfuric acid, nitric acid or hydrochloric acid, the acid-soluble phase is eluted, a porous glass abundant in SiO2 is obtained, and by firing this porous glass, a high silicate glass is obtained (Page 3).

Nakagawa '432 does not expressly disclose the borosilicate glass impurities manganese, cerium, chromium, etc. Nakagawa '432 states the glass is "composed

mainly of SiO2, B2O3 and Na2O" (Page 3-4, Detailed Specification). The term "mainly" indicates there are other impurities in the glass that are insignificant in the process described.

Regarding instant claim 3, both melting steps (heat treatment and sintering) require heating the raw material. Regarding instant claim 6, a glass composition comprising over 10ppm of boron with a thickness in the region of 1 mm is used to produce high silicate glass (Page 7, Practical Example). Since Nakagawa '432 disclose a glass of the same composition as instantly claimed, treated as instantly claimed, one of ordinary skill in the art at the time the invention was made would have expected the Nakagawa '432. glass to inherently be the same as instantly claimed.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable by Nakagawa et al. (JP 57-188432) in view of Corning Glass Works (US 3113855) in view of Nakagawa et al. (JP 57-205337).

A translated copy of Nakagawa '337 was used and has been submitted with this Office Action.

The teachings of Nakagawa '432 are detailed in the rejection of claims 1,3,6,7,9, and 13-16 under 35 USC 103(a) above.

Nakagawa '432 does not expressly disclose repeated heat and acid treatment...

Corning Glass Works discloses a process of producing high silica glass. Borosilicate glass is subjected to repeated heat and acid treatment between the acid-treatment step and the sintering step (Column 1, lines 40-55) in order to reduce the B2O3 content of the glass, increase transmittance and the annealing point (Column 3, Paragraph 4). It would be obvious to one of ordinary skill in the art at the time the invention was made to reduce the B2O3 content of the glass as taught by Corning Glass Works in the process of Nakagawa '432. The rationale to do so would have been the motivation provided by the teachings of Corning that to do so would predictably increase the transmittance and the annealing point of the glass (Column 3, Paragraph 4).
Neither Nakagawa '432 nor Corning Glass Works teach the use of ethylenediamine tetraacetic acid (EDTA) as an acid treatment.

Nakagawa '337 discloses a similar method of producing high silicate glass where EDTA is used to further treat the material in order to produce a high silicate glass with high ultraviolet transmittance. (Abstract).
It would have been obvious to one of ordinary skill in the art to include the EDTA treatment taught by Nakagawa '337 in the process of Nakagawa '432 and Corning Glass Works. The rationale to include the EDTA as taught by Nakagawa '337 in the high silicate glass production taught by Corning is the motivation provided by the teaching of Nakagawa' 337 that to do so would

remove metal oxides from the glass and predictably increase the glass transmittance (Page 4, Paragraph 2)

15. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable by Seikosha et al. (JP 59-102832A) in view of Corning Glass Works (US 3113855) in view of Nakagawa et al. (JP 57-205337).

The teaching of Seikosha et al. is detailed in the rejection of claims 3,4,6,7, and 9 under 35 USC 103(a) above,

Seikosha et al. does not expressly disclose repeated heat and acid treatment in between the acid treatment step and sintering.

Corning Glass Works discloses a process of producing high silica glass. Borosilicate glass is subjected to repeated heat and acid treatment between the acid-treatment step and the sintering step (Column 1, lines 40-55) in order to reduce the B2O3 content of the glass, increase transmittance and the annealing point (Column 3, Paragraph 4). It would be obvious to one of ordinary skill in the art at the time the invention was made to reduce the B2O3 content of the glass as taught by Corning Glass Works in the process of Seikosha et al. The rationale to do so would have been the motivation provided by the teachings of Corning that to do so would predictably increase the transmittance and the annealing point of the glass (Column 3, Paragraph 4).

However, neither Seikosha et al. nor Corning Glass Works teach the use of ethylenediamine tetraacetic acid (EDTA) as an acid treatment.

Nakagawa '337 discloses a similar method of producing high silicate glass where EDTA is used to further treat the material in order to produce a high silicate glass with high ultraviolet transmittance. (Abstract).

It would have been obvious to one of ordinary skill in the art to include the EDTA treatment taught by Nakagawa '337 in the process of Seikosha and Corning Glass Works. The rationale to include the EDTA as taught by Nakagawa '337 in the high silicate glass production taught by Corning Glass Works is the motivation provided by the teaching of Nakagawa '337 that to do so would remove metal oxides from the glass and predictably increase the glass transmittance (Page 4, Paragraph 2).

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable by Seiko et al. (JP 2003-313050) in view of Corning Glass Works (US 3113855) in view of Nakagawa et al. (JP 57-205337).

The teachings of Seiko et al. are detailed in the rejection of claims 1, 2, and 6 under 35 USC 102(b) above.

Seiko et al. dies not expressly disclose repeated heat and acid treatment between the acid-treatment step and the sintering step.

Corning Glass Works discloses a process of producing high silica glass. Borosilicate glass is subjected to repeated heat and acid treatment between the acid-treatment step and the sintering step (Column 1, lines 40-55) in order to reduce the B2O3 content of the glass, increase transmittance and the annealing point (Column 3, Paragraph 4).

It would be obvious to one of ordinary skill in the art at the time the invention was made to reduce the B2O3 content of the glass as taught by Corning Glass Works in the process of Seiko et al. The rationale to do so would have been the motivation provided by the teachings of Corning that to do so would predictably increase the transmittance and the annealing point of the glass (Column 3, Paragraph 4).

However, neither Seiko nor Corning Glass Works expressly disclose ethylenediamine tetraacetic acid (EDTA) as an acid treatment.

Nakagawa '337 discloses a similar method of producing high silicate glass where EDTA is used to further treat the material in order to produce a high silicate glass with high ultraviolet transmittance. (Abstract).

It would have been obvious to one having ordinary skill in the art to include the EDTA treatment taught by Nakagawa '337 in the process of Seiko and Corning Glass Works. The rationale to include the EDTA as taught by Nakagawa '337 in the high silicate glass production taught by Corning is the motivation provided by

the teaching of Nakagawa '337 that to do so would remove metal oxides from the glass and predictably increase glass transmittance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARGARET BRODIE whose telephone number is (571)270-7713. The examiner can normally be reached Monday – Friday during normal business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-965-9865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARGARET BRODIE/
Examiner, Art Unit 4122

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796